Absolent

EN

User's manual in original

Oil mist and Oil smoke filter

- A•smoke^{20}
- A•smoke^{40}
- A•smoke^{120}

Including *Heat Treat Version*

A•smoke

1 BASIC INFORMATION

Read and understand the user's manual before beginning to work in the filter unit.

1.1 Introduction

In the following documentation you will find all essential information concerning safety, installation, start-up and maintenance.

This product is manufactured and designed in accordance with the EU directives that this product is embraced by.
In order to maintain this status, installation, repair and maintenance may only be carried out by qualified personnel and the use of original spare parts.
For advice regarding technical service or the need of spare parts please contact Absolent AB or your closest accredited dealer. Contact information can be found under the heading "Technical Support".

1.2 Range of Application

The filter unit A•smoke is only designed to clean oil-contaminated* air. Other use of the filter unit is not allowed, except where the manufacturer guarantees the function. At the use of A•smoke in surroundings with graphite, plumb or chrome, more frequent service can be necessary.

*e. g. from lubricants such as emulsion, synthetic oil or/and mineral oil.

1.3 Table of Contents:

1 Basic information 2
1.1 Introduction 2
1.2 Range of Application 2
1.3 Table of Contents 2
2 Approved to CE-directives, UL and CSA standards 3
3 List of warning signes 3
4 Safety Precautions 4
5 Transport/Set up/Installation 5
5.1 General 5
5.2 Transport 5
5.3 Mounting 5
5.3.1 Putting the filter upright 5
6 Function / Design 6

1.3 Table of Contents, cont.

7 Technical Details 6
8 Electrical connection 7
8.1 General 7
8.2 Electrical connection of A•smoke^{20} 7
8.3 Electrical connection of A•smoke^{40B} 8
8.4 Electrical connection - A•smoke^{40} (standard unit) with control cabinet 9
8.4.1 Function of the control cabinet 9
8.4.2 Wiring scheme 10
8.4.3 Level sensor 10
8.5 Electrical data of the fan motor 10
9 To be checked before the first start of the filter unit 11
10 Service/maintenance 12
10.1 General 12
10.2 Service schedule 12
11 Electronic manometer A•monitor (A•smoke^{20}, A•smoke^{40}) 13
11.1 Function 13
11.2 Pressure settings 13
12 Handling the filter cassettes 14
12.1 Weight of the filter cassettes 14
12.2 Instruction for replacing the filter cassettes - A•smoke^{20} 14
12.3 Instruction for replacing the filter cassettes - A•smoke^{40}, A•smoke^{120} ... 15
12.4 Used filter cassettes 16
13 Accessories 16
13.1 Protective Motor Switch A•smoke^{20} ... 16
13.2 Liquid Traps 17
13.3 Extension Frame 17
13.4 Transition Outlet 18
13.5 Carbon Filter Module 18
13.6 Spray System 18
13.7 Frequency converter 19
13.8 Prefilter for severe dirt 19
14 A•smoke^{40} *Heat Treat Version* 20
15 Fault Tracing 21
16 Absolent warranties 22
17 Spare Parts 22
18 Technical support 22
19 EC Declaration of conformity 23

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2 APPROVED TO CE-DIRECTIVES, UL AND CSA STANDARDS

The A•smoke product line is approved to:

Machine directive	2006/42/EG
Electromagnetic Compatibility (EMC)	2004/108/EG
Low Voltage Directive (LVD)	2006/95/EG

For the EC declaration of conformity in its entity, see chapter 19.

All electrical components are UL approved.
The electrical motor is CSA approved.

The CSA approval is solely applicable to the electrical motor.

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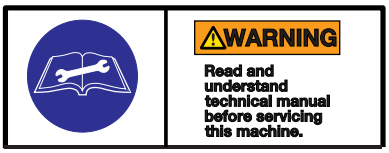
2009-12-28

Tony Landh, CEO

3 LIST - WARNING SIGNS



Warning - Read the instructions
Read and understand the user guide before working on the filter unit.
The sign is positioned on the right-hand side of the filter unit.

Warning - Dangerous voltage
All electrical work must be carried out by qualified electricians.
The sign is located next to the control cabinet.

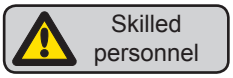
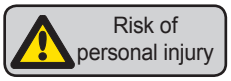
Warning - Tip risk
The filter unit has a high centre of gravity and with that a risk of tipping. In order to avoid personal injury, see the lifting instructions under the heading “Transport/Set up”. This sign is placed on the packaging and on the right-hand side of the filter unit.

Warning - Rotating parts
Caution - the filter unit/ and pump can be started by the timer, remote control or by a connected processing machine.
The sign is positioned on the right-hand side of the filter unit.

Warning - Risk of injury
Caution the filter unit can contain fluids dangerous to health. Refer to the product sheet for the fluids in question before handling. The sign is positioned on the right hand side of the filter unit.

Danger - Heavy products
The filter cassettes become heavier with use. Check the current weight of the filter cassette before handling. Weight details can be found on the filter cassette’s rating plate and under the heading 11 “ Handling the filter cassettes”.

4 SAFETY PRECAUTIONS

Type of warning	Warning text
	Warning - Hazardous voltage! The filter unit works with a high electrical voltage. The electrical installation must be performed by qualified electricians. Disconnect the power supply to the filter unit before it is opened and/or before starting work on the filter unit.
	Warning - Do not connect the filter unit to explosive gases! Do not connect the filter unit to processing machines that can bring about an explosion risk. Furthermore, the filter unit must not be connected to media that are highly inflammable without preventative measures being taken to stop the spread of the explosion or fire to the filter unit.
	**Caution - Read and understand the user's manual!** Read and understand the user guide before working on the filter unit.
	Caution - Qualified personnel only! All work concerning transport, installation and maintenance must be performed by qualified personnel.
	**Risk of trapping injury!** Do not insert your hand into the filter unit when the fan is running. Do not wear loosely hanging clothing near the fan when operational. These can be sucked into the fan or get caught.
	Risk of tipping over! Always check the weight of the filter unit (technical data, heading 7) before lifting. When equipped with an integrated fan assembly the centre of gravity of the filter unit is relatively high. When transporting the filter unit, secure well - an alternative can be to transport the filter unit horizontally.
	Heavy products! Filter cassettes are heavy. Check the current weight of the filter cassette before handling. Weight details can be found on the filter cassette's rating plate and under heading 12 "Handling the filter cassettes". Lifting equipment or the like must be used during service and inspection work above the ground.
	Risk of slipping! Keep the floor clean. Remove oil spill to prevent injury due to slipping.
	High noise levels! If the sound level at the control panel/workplace exceeds 75 dB(A) ear protection must be worn.
	Dangerous fluids! Use requisite personal safety equipment with all types of service work, as the filter unit can contain liquids dangerous to health. Refer to the product sheet for the liquids in question before handling.
	Caution when recirculating air back into the building! Note that in its standard design the filter unit does not separate gas molecules.

Subject to alteration without prior notice.

5 TRANSPORT / SET UP / INSTALLATION

5.1 General

Check that the unit is undamaged on arrival and when unpacking. Contact the carrier in the event of transport damage.

5.2 Transport and delivery

The filter unit is supplied on a wooden pallet wrapped in plastic foil. Is the filter unit delivered standing up, it has a sign ”Risk of tipping over” on its wrapping. The packaging should remain on the filter unit up until installation in order to prevent damage. Secure the filter firmly, or transport the filter horizontally. One of the following methods must be used when lifting:

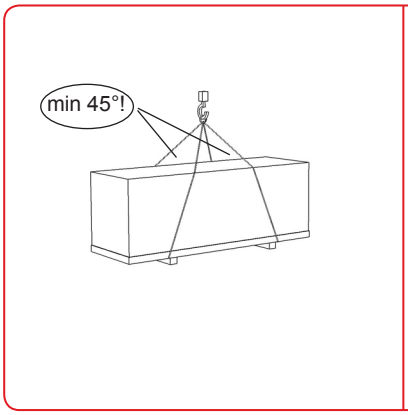


Fig.1: Lifting the filter unit on a wooden pallet with an overhead crane.

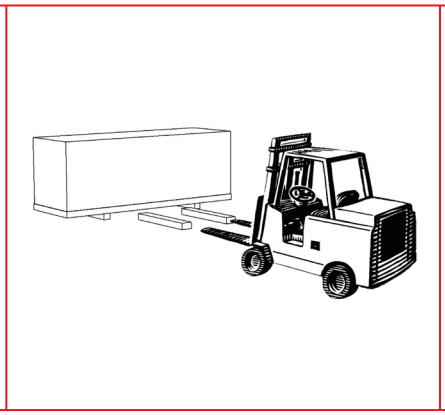


Fig.2: Lifting the filter unit on a wooden pallet with a forklift truck.

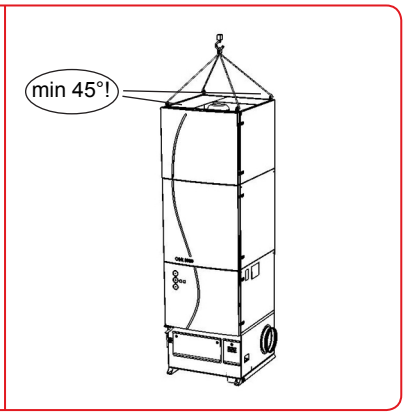


Fig.3: Lifting a vertical filter unit using a forklift truck or overhead crane.

5.3 Set up

The filter unit must be set up on a flat and firm surface. The surface must be designed to support the weight of the filter unit. When setting up the filter unit, ducts, pipes, and electrical cables, ensure that the service doors can be opened freely (see fig. 4) and that internal components such as the filter cassettes can be removed as required.

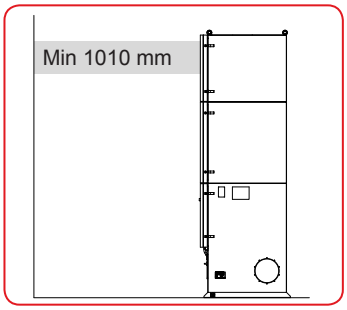


Fig.4

5.3.1 Lift to the vertical position

1. Ensure that the toggle fasteners on the service doors are secured , before the filter unit is lifted to a vertical position.
2. When the filter is to be raised, fit the lifting device in the two lifting eyes, as shown in fig. 5. Carefully lift the unit as shown in fig. 6.
   NB: The cords have to be long enough to form an angle of a minimum of 45° between cord and filter unit.
3. Position the filter unit in the correct position and bolt to the floor.
4. Open the door and check that the filter cassettes are properly secured, i.e. that the sealing is compressed to approx. 3 mm. If a filter cassette has become loose during transport, secure them and close the service doors.
   (How to secure, se heading 12.2 resp. 12.3.)
5. Connect the drainage.
6. Connect the suction pipe with a control damper. When a branch pipe is used, the recommended connection is a 30° elbow, as this gives a low pressure drop for the entire installation.
7. Connect the unit electrically (possible fan, pump and/or other accessories). Also see heading 8 “Electrical connection”.

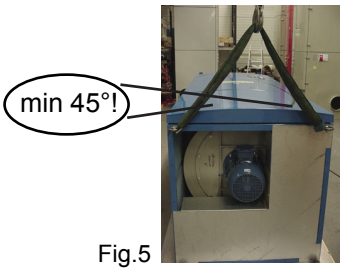


Fig.5

Fig.6

6 FUNCTION / DESIGN

A•smoke

Contaminated air is sucked into the inlet (1) in the lower section of the filter unit and passes through filter stage 1 (2), where the majority of the oil particles are trapped.Filter stage 1 gets saturated and the oil drops into the bottom of the filter unit, which acts as a collection container. From there, it is pumped (8)(accessory, not A•smoke[20]) or drained away. The air passes through an additional Absolent filter (3), where the remaining bigger particles are filtered out and on via a HEPA filter (4) to the integrated fan (5). Generally the air is now free from particles and can be returned directly to the premises.

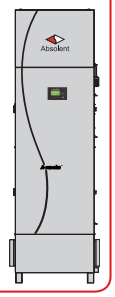
1. Inlet, pipe connection
2. Filter stage 1 (Absolent)
3. Filter stage 2 (Absolent)
4. Filter stage 3: HEPA filter
5. Fan
6. A•monitor
7. Control cabinet (Accessory, standard only for A•smoke[40])
8. Return oil tank & pump (accessory)
9. Outlet

A•smoke[40] principle

7 TECHNICAL DETAILS

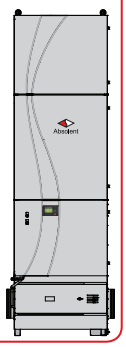
A•smoke[20]

A•smoke[20] with integrated fan.



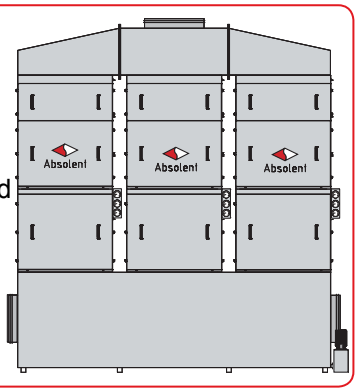
A•smoke[40]

A•smoke[40] with integrated fan.



A•smoke[120]

A•smoke[120] with centered outlet and external fan.



		A•smoke[20]	A•smoke[40]	A•smoke[120]
Height, centred outlet	[mm]	2420	3485	3682
Height, side outlet	[mm]	-	-	3932
Width, excl. pump case (with pump case + 80 mm)	[mm]	700	1010	3314
Depth	[mm]	780	1125	1125
Standard connection inlet	[mm]	Ø 200	Ø 315	Ø 500
Standard connection outlet	[mm]	-	-	Ø 630
Standard connection return oil	[in]	W 1 1/4”	W 3/4”[1)]	W 3/4”[1)]
Weight filter unit with dry filter cassettes	[kg]	300	1000	2600
Available dim. external pressure drop	[Pa]	430	1000	-
Filter cassettes				
Absolent filter	[pc]	2	2	6
HEPA (H13)	[pc]	1	1	3
Performance				
Max. air flow	[m³/h]	2000	4000	12000
Sound level (3 m in front of filter unit)	[dB/(A)]	60	67	[2)]

[1)] All filter units without pump have a nom. pipe size W 1 1/4” return oil connection.

[2)] The level of sound emitted from the filter units with external fan is specified in the user’s manual for the fan.

For the electrical data, see heading 8. A wiring diagram is even included in the control cabinet.

Subject to alteration without prior notice.

8 ELECTRICAL CONNECTION

Warning - Dangerous voltage
All electrical work must be carried out by qualified electricians.

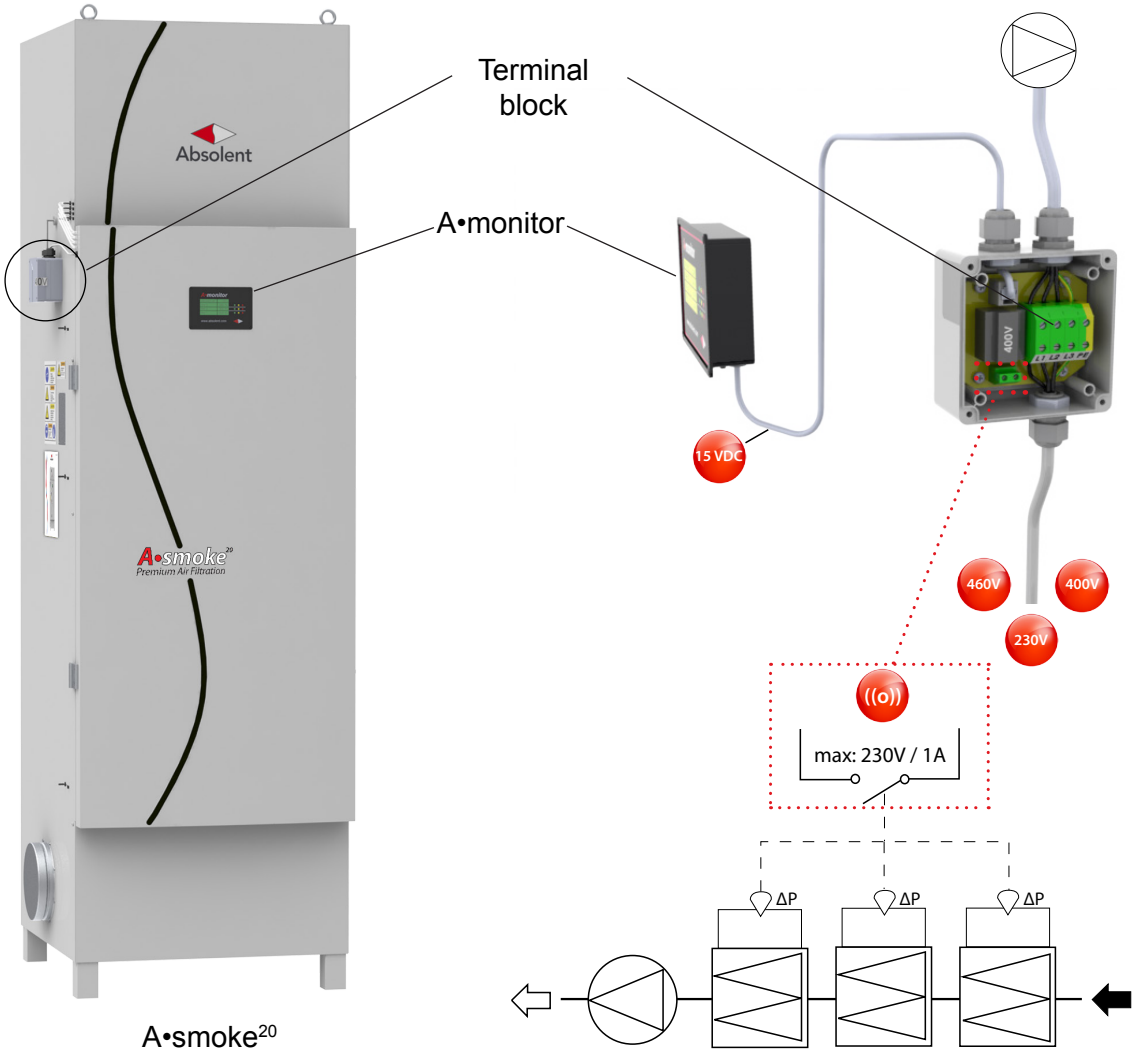
Risk of trapping injury!
Do not insert your hand into the filter unit when the fan is running. Do not wear loosely hanging clothing near the fan when operational. These can be sucked into the fan or get caught.

8.1 General

For the warranty to apply, a qualified person must carry out all the electrical wiring in accordance with local regulations. If the filter unit is equipped with extra electrical equipment, this equipment shall be wired according to the wiring diagram supplied.
The Absolent oil mist and oil smoke filter unit can be customized to meet your needs. The range of accessories includes starting equipment and other electrical periphery equipment. The most common accessories are described under the heading ”Accessories”. The standard equipment for the unit A•smoke[40] *Heat Treat version* are described in heading 14.

8.2 Electrical connection of A•smoke[20]

The Absolent A•smoke[20] filter unit is standardly equipped with wired cables from the fan to the terminal block on the side of the filter unit.



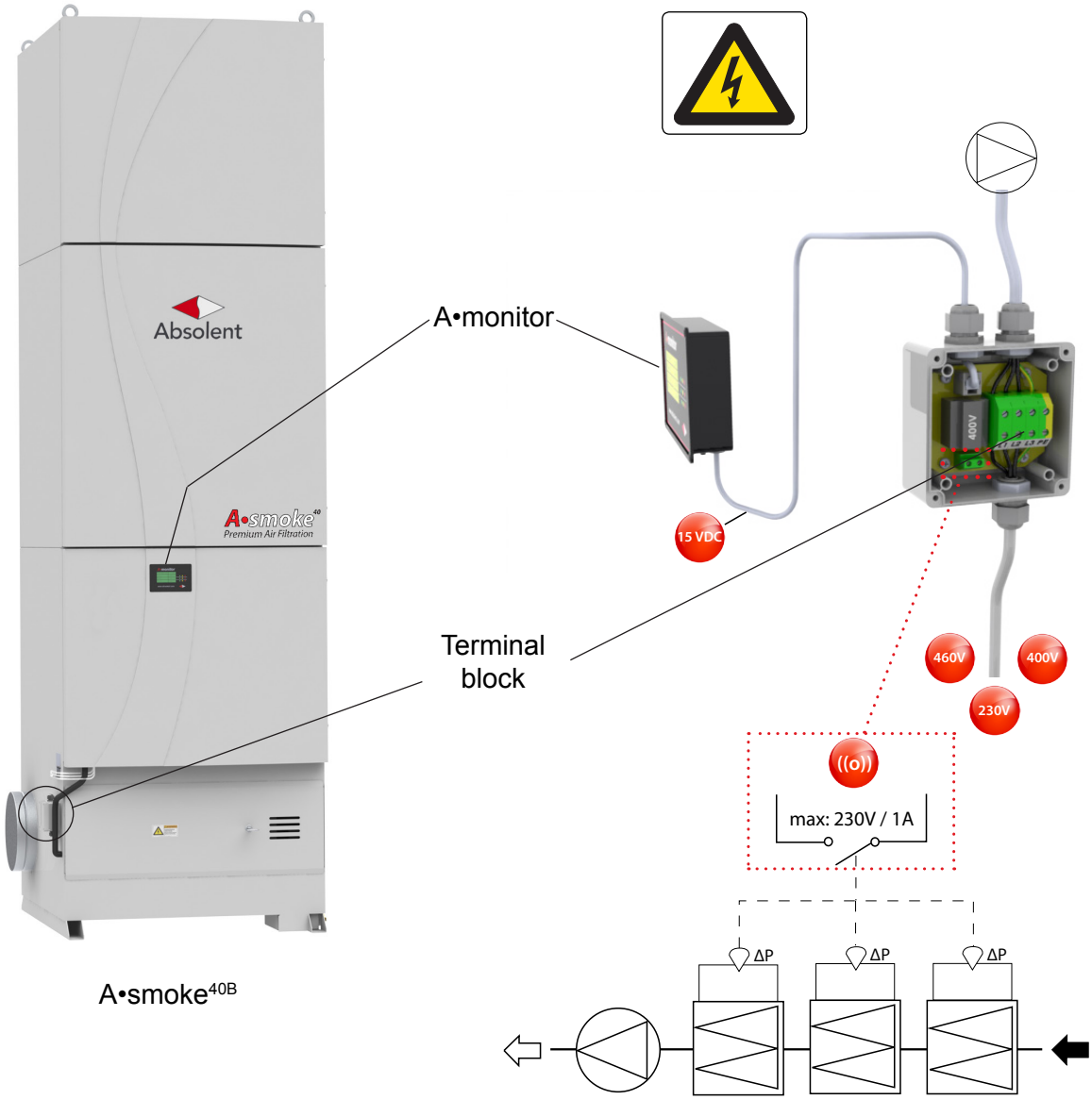
A•smoke[20]

Electrical data for the fan motor: see 8.5!

8 ELECTRICAL CONNECTION (cont.)

8.3 Electrical connection of A•smoke^{40B} (Basic)

The Absolent A•smoke^{40B} filter unit is standardly equipped with wired cables from the fan to the terminal block on the side of the filter unit.



A•smoke^{40B}

Electrical data for the fan motor: see 8.5!

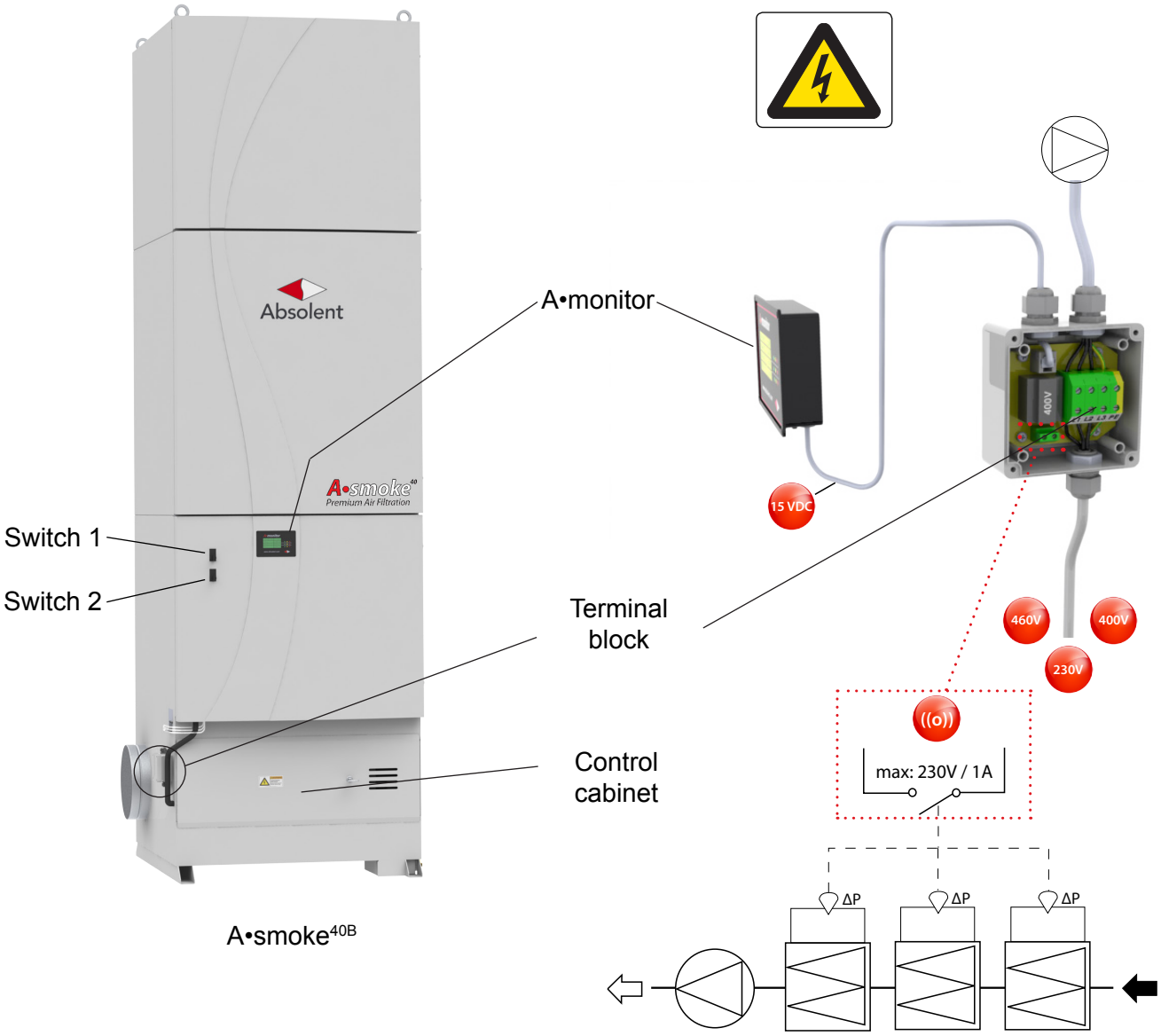
Subject to alteration without prior notice.

8 ELECTRICAL CONNECTION (cont.)

8.4 Electrical connection of A•smoke^{40} with control cabinet (standard model)

The Absolent A•smoke^{40} is standardly equipped with a control cabinet for fan and oil return pump. The wiring diagram is located inside the control cabinet.
For the warranty to apply, all electrical connections must be carried out by a qualified electrician and in accordance with applicable directives. If the filter unit is fitted with other electrical equipment; that equipment must be wired according to the wiring diagrams applicable to that supply.

The transformer of the electronic manometer A•monitor is wired to the control cabinet at the bottom of the filter unit.

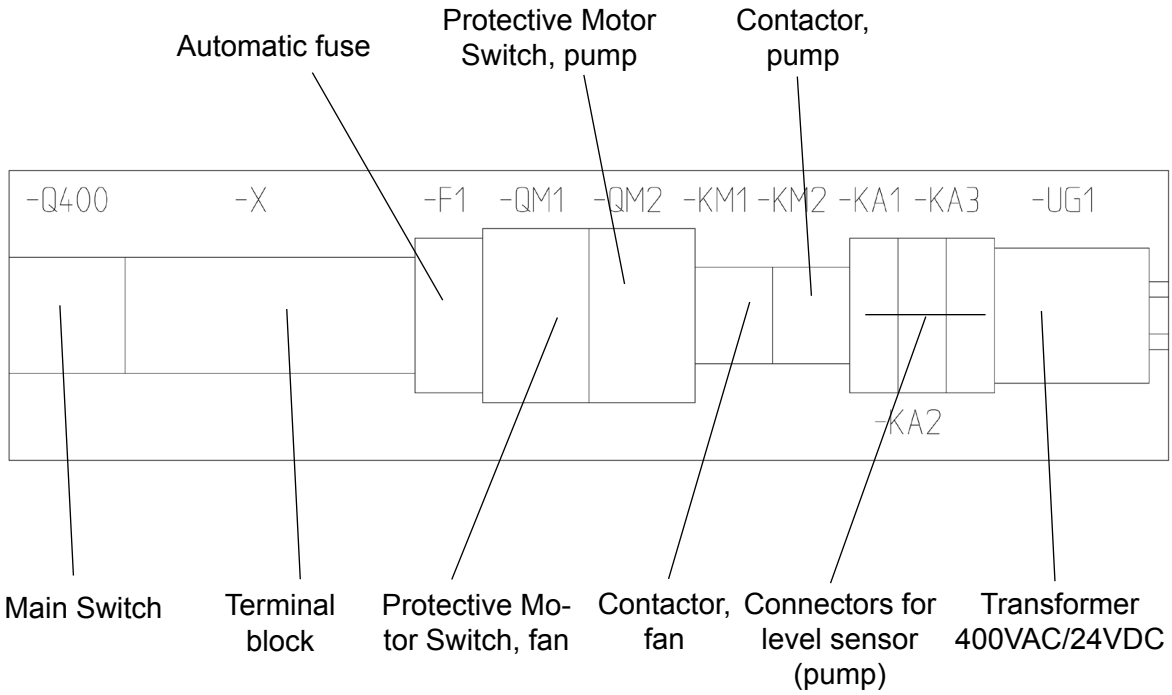


8.4.1 Function of the control cabinet

The control unit controls the fan and the oil pump.
To start the fan, set switch 1 on the outside of the door at position 1. To start the pump, set switch 2 on the outside of the door at position Aut. The pump is thereby controled by the level sensor. To operate the pump manually, set switch 2 on the outside of the door at position 1. The LEDs in switch 1 and 2 indicate that the fan resp. pump are operating.

8 ELECTRICAL CONNECTION (cont.)

8.4.2 Components of the control cabinet



8.4.3 Level sensor

The level sensor and the pump are situated on the same lid behind the blend at the lower front of the unit. The sensor has two floats with the following functions:

1. The lower float in its lowest position = pump shut off.
2. The lower float in its uppermost position = pump starts.
3. The upper float in its uppermost position = electrical signal is generated that can be used for alarm purposes, i.e. customer specific.

8.5 Electrical data of the fan motor

Filter unit	Standard fan motor	Mains fuse	Comment
A•smoke^{20}	2.2 kW; 4.6 A; 400 V; 50 Hz	10 A	Direct start
A•smoke^{40B}	7.5 kW; 14.2 A; 400 V; 50 Hz	35 A	Direct start
A•smoke^{40}	7.5 kW; 14.2 A; 400 V; 50 Hz	35 A	

The electrical data can also be read from the rating late on the right-hand side of the filter unit.

Subject to alteration without prior notice.

9 TO BE CHECKED BEFORE THE FIRST START OF THE FILTER UNIT

Risk of trapping injury!
Do not insert your hand into the filter unit when the fan is running. Do not wear loosely hanging clothing near the fan when operational. These can be sucked into the fan or get caught.

1. Check that the filter cassettes are properly secured.
Open the door and check that the filter cassettes are properly secured, i.e. that the sealing is compressed to approx. 3 mm. How to secure, se headings 11.2 resp. 11.3.

2. Control cabinet (A•smoke^{40})
Open the lid of the control cabinet. Check that the protective motor switches for fan and pump are activated. The black buttons have to be pressed in. Check that the fuses for the transformer are switched on. Switch on the power supply to the control unit by turning the safety isolating switch to position ”1”.

3. The fan’s direction of rotation
Make sure that the fan impeller rotates in the proper direction (counter-clockwise viewed from the motor side). If you are unable to see the motor while the impeller is rotating, start the fan, read the pressure drop across the filters from the pressure gauge, stop the fan, transpose two phase leads, restart the fan and read the pressure drop again. The connection that gave the highest pressure drop is the correct one.

4. Air flow
The air flow must be checked, so that the value does not exceed the design level for the installation (refer to the quote or unless otherwise stated the nominal flow under heading “Technical data”). The air flow can be adjusted with the damper or frequency converter, if fitted. If it is difficult to reach the required flow, check the direction of rotation of the fan motor according to section 2 above. If the unit is run with a too high flow, there is a large risk that the life span of the filter cassettes will be shortened.

5. Pressure drop over the filter cassettes
A•smoke^{20} and A•smoke^{40}: Read the A•monitor and note down the pressure drop over the different filter stages (heading 11). A•smoke^{120}: Read the analogue pressure gauges (heading 10).
These values can then be used as a basic value to assess the pressure increase /life span of the different filter cassettes.

6. Return oil pump
Check that the pump starts, preferably by lifting the floats on the level sensor (see 8.4.3).

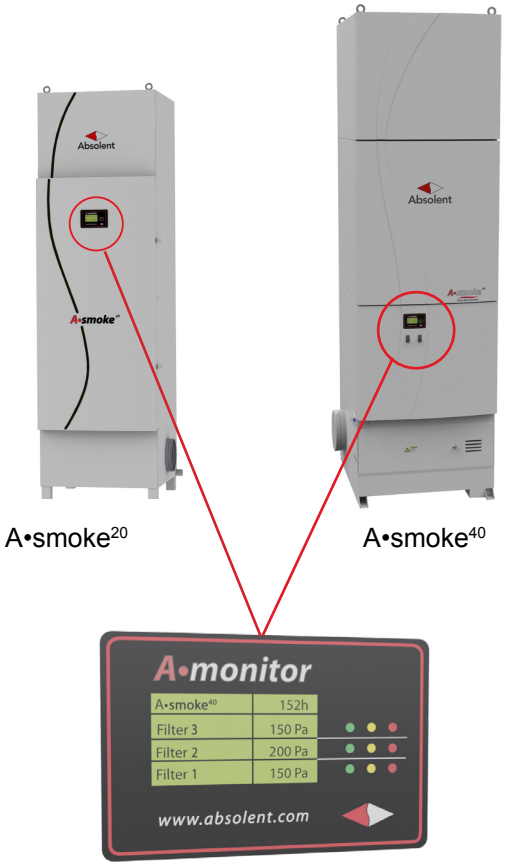
7. Spray system (if installed)
If the filter unit is equipped with a spray system its function must be checked as this has a large effect on the life span of the filter cassettes.
The function of the spray system and fault tracing are described in the separate user guide.

8. Frequency converter (if installed)
If the filter unit is equipped with a frequency converter, you find a protocol of the different settings and a description how to handle the frequency converter attached.

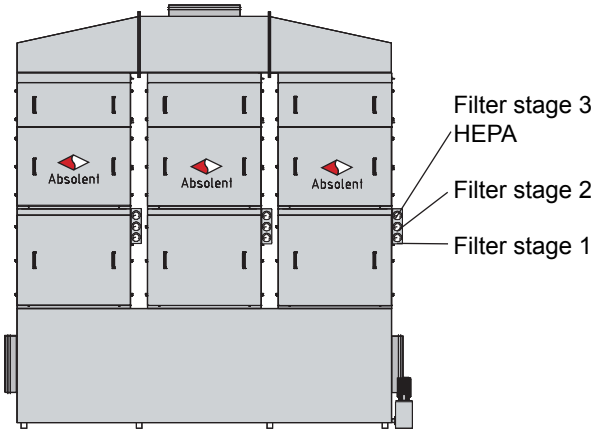
10 SERVICE / MAINTENANCE

10.1 General

Preventive maintenance and regular service extend the life span and ensure that the filter unit maintains its performance. Besides, you mainain a high cleaning efficiency in the industrial environment. To facilitate inspection of the filter cassette status, Absolent supplies the A•smoke[20] and A•smoke[40] filter units with an electronic pressure gauge as a standard. A•smoke[120] is supplied with 3 analogue pressure gauges for the different filter stages. The different pressure gauges are positioned on the front of the filter unit as shown below:



A•smoke[20] A•smoke[40]



A•smoke[120]

The pressure gauges are graduated in [Pa] and contain green, yellow and orange sectors. The filter cassette is to be replaced when its pressure gauge has reached the orange sector. The yellow sector is a warning that the filter cassette replacement is to be planned. For a service contact, see the heading “Technical Support”.

Service shall take place when the drop has reached the orange sector, for the latest. Note however, that the filter unit will not be damaged when operated with a clogged filter stage, but the required air flow will not be attained. Handling during service is described under “Changing the filter”.

More information on the electronic manometer, see heading 11.

10.2 Service schedule

Action	Monthly	Six monthly	Annually
Filter cassettes Establish filter cassette status by reading the electronic pressure gauge	X[1)]		
Bottom section / Drainage Check that the return oil pipe is not blocked	X[2)]	X[2)]	
Fan Check that there is no abnormal noise or vibration			X

1) In order to get to know your new installation, the filter cassettes should be checked once a month during the first six months the filter unit is in use. The service interval is then adapted according to the installation in question. However, no longer than six months between inspections. Note that when the yellow LED lights, the inspection interval must be increased as the pressure drop now increases quicklier.

2) In order to get to know your new installation, the bottom section and drainage should be checked once a month during the first six months the filter unit is in use. The service interval is then adapted according to the installation in question.

Subject to alteration without prior notice.

11 ELECTRONIC PRESSURE MONITOR (A•smoke^{20}, A•smoke^{40})

11.1 Functional description

An electronic pressure gauge A•monitor is supplied as standard along with all A•smoke filter units. The pressure monitor is delivered factory preset and contains the following features:

A

OPTICAL DISPLAY OVER EACH FILTER STAGE
The present pressure drop over each filter stage is monitored (See 11.2.)

B

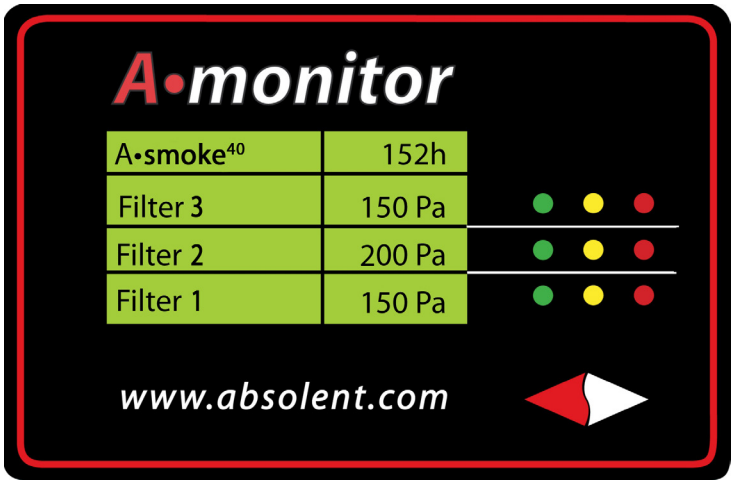
LED INDICATION
A green LED lamp is lit as long as the filter cassette is working within the preset pressure range. When the yellow lamp is lit, call your service contact to replace the filter stage. When the red LED lamp is lit, the pressure drop is too high for the filter unit and it gives a reduced air flow.

C

HOUR COUNTER DEVICE
An hour-counter device is also included in our standard equipment.
It measures and monitors the operation time in hours for the filter unit.

D

ALARM
On the transformator card, there is an alarm output that can be used for external alarms (maximum 1A). If any of the filter stages reaches alarm level (red LED), the alarm output closes, see 8.5)



11.2 Pressure settings

Type		Green [Pa]	Yellow [Pa]	Red [Pa]
A•smoke^{20}	Filter 3 (HEPA)	0-600	600-800	> 800
	Filter 2 (S3B3)	0-800	800-1000	> 1000
	Filter 1 (S1)	0-1000	1000-1500	> 1500
A•smoke^{40}	Filter 3 (HEPA)	0-800	800-1000	> 1000
	Filter 2 (S10B3)	0-2300	2300-2500	> 2500
	Filter 1 (S1)	0-2300	2300-2500	> 2500
A•smoke^{40} *Heat Treat version*	Filter 3 (HEPA)	0-800	800-1000	> 1000
	Filter 2 (M93)	0-2300	2300-2500	> 2500
	Filter 1 (D44)	0-2300	2300-2500	> 2500

PLEASE NOTE!
If a filter stage is used even though the red LED-lamp is lit, the filter unit gives a reduced air volume. Note however, that the filter unit will not be damaged when operated with a clogged filter stage. Handling during service is described under “Changing the filter”.

12 HANDLING THE FILTER CASSETTES

Warning!
Use requisite personal protection equipment when performing service work on the filter unit.
Lifts or the like must be used when carrying out service work above the ground.

12.1 Weight of the filter cassettes

Filter cassettes are heavy, especially when filled with fluid after a period of use. Below is a table of weight for the different filter cassettes available. The type designation of the supplied filter cassette can be found on the rating plate located on the front of the filter cassette.

Filter type	Filter cassette type	Weight new cassette (dry)	Weight fluid filled cassette
A•smoke^{20}	Stage 3: HEPA TRSA-N 990 595x292	12 kg	16 kg
	Stage 2: S3B3/650	25 kg	50 kg
	Stage 1: S1/650	80 kg	120 kg
A•smoke^{40} and A•smoke^{120}	Stage 3: HEPA TRSA 1D-N 1000x914	27 kg	37 kg
	Stage 2: S10B3/914 alt S10/914 resp. M93 (Heat Treat version)	155 kg	210 kg
	Stage 1: S1/914 resp. D44 (Heat Treat version)	155 kg	210 kg

12.2 Instruction for replacing the filter cassettes - A•smoke^{20}

1. Read the electronic manometer A•monitor and note down the pressure drop over the different filter stages when the filter unit is in operation. The filter cassettes whose LEDs light in yellow or red have to be replaced.
2. Shut down the fan and disconnect the filter unit from electricity.
3. Open the service door.
4. Loosen the cassette by releasing the two bolts (fig. 1).
5. Lift out the filter cassettes (fig. 2) that show a pressure drop which exceeds the service level according to “Care and maintenance”. When replacing Filter stage 1, check and remove any dirt from the bottom of the filter unit.
6. Check that the sealing strip is undamaged before the new filter cassette is slid in (fig. 3). The sealing strip must be seated upward.
7. Secure the filter cassette (fig. 4).
8. Connect the filter unit to electricity
9. Start the fan and check the pressure drop.

Fig.1

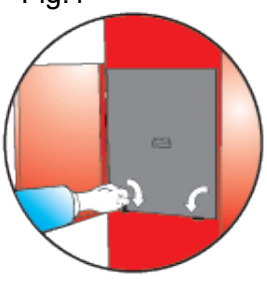


Fig.2

Fig.3

Fig.4

Subject to alteration without prior notice.

12 HANDLING THE FILTER CASSETTES cont.

12.3 Instruction for replacing the filter cassettes - A•smoke^{40} and A•smoke^{120}

1. Read the electronic manometer A•monitor (A•smoke^{120}: the analogue pressure gauges) and note down the pressure drop over the different filter stages when the filter unit is in operation. The filter cassettes whose LEDs light in yellow or red have to be replaced. A•smoke^{120}: The filter cassettes whose manometers have reached the yellow or orange sectors have to be replaced.
2. Shut down the fan.
3. Disconnect the filter unit from electricity.
4. Open the service door.
5. Loosen the cassette by releasing the two bolts (fig. 1).

6.1 Filter stage 1 and 2
Withdraw the filter cassette with the aid of the Absolent filter sledge (accessory) or a pallet and forklift, view fig. 2. Be carefull, as the filter cassette is very heavy and possibly slippery with oil!

6.2 Filter stage 3 (HEPA-filter)
Withdraw the filter cassette.

7. Lift the new filter cassette upp with the sealing strip upward and check that the sealing strip is undamaged.
8. Push it all the way into the filter housing (view fig. 3).
9. Secure the filter cassette by tightening the two bolts (fig. 4). The filter cassette is to be thightened until the sealing strip is compressed to a thickness of about 0.12 inches / 3 mm.
10. Connect the filter unit to electricity.
11. Start the fan and check the pressure drop reading for all three filter cassettes. The pressure gauges should now be in the green sector / the green lights alight.

Note! If the supply air has a high content of chips or shavings, the draining plate in the bottom part of the filter unit has to be inspected and cleaned regularly to prevent it from becoming clogged.

Fig.1

Fig.2

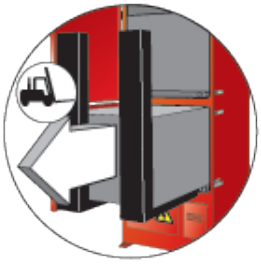


Fig.3

Fig.4

12.4 Worn out filter cassettes

When the filter cassette is worn out it has to be taken care of in an environmental-friendly way. The sheet metal casing and the aluminum separators can be recycled.
Clean filtermedia can be sent to disposal facilities, but when it contains oil and particles from the process, local regulations for disposal or incineration need to be followed.
If the oil is washed from the cassette, it can usually be sent for landfill.

13 ACCESSORIES

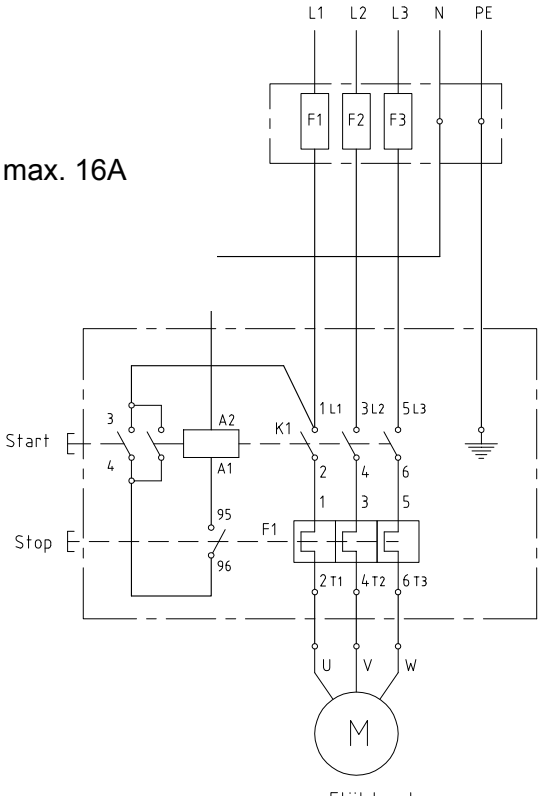
A variety of accessories are available for the Absolent type A•smoke oil mist and oil smoke filter unit. Instructions for installing these are provided on the next pages. However keep in mind that these products must be ordered separately from us if they are to be included in the delivery.

13.1 PROTECTIVE MOTOR SWITCH - A•smoke[20]

Dangerous voltage
All electrical work must be carried out by qualified electricians.

Wiring diagram for the Protective Motor Switch of the A•smoke[20]

Fuses, max. 16A



Fan motor:
2.6 kW, 4.6 A

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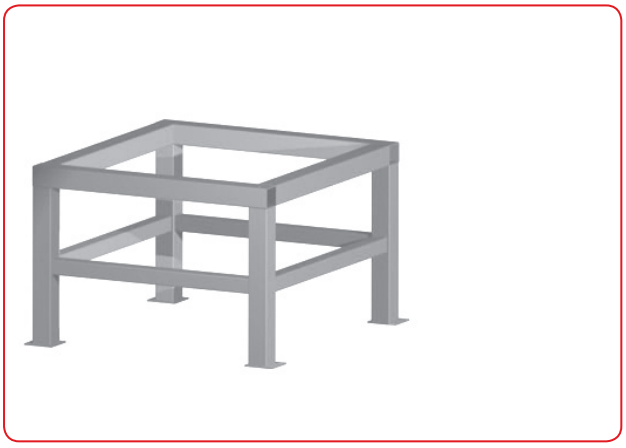
13.2 LIQUID TRAPS

Liquid Trap
The liquid trap is designed for connection to the return oil pipe of the filter unit.
The outlet of the liquid trap should not discharge in such a way that the liquid can damage adjacent building components.
Correct installation of the liquid trap is very important due to the normal sub-atmospheric pressure inside the filter unit.
If you use the liquid trap, the filter unit is to be placed on an extension frame (13.4) or a mezzanine.

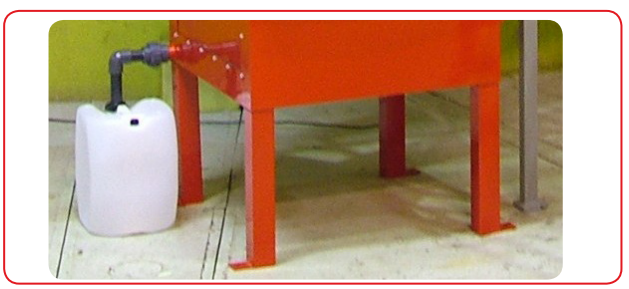
Liquid Trap Receptacle for A•smoke^{20}
The liquid trap receptacle is designed for connection to the return oil pipe of the filter unit.
Liquid trap receptacle consists of a drain pipe with elbow for connection to the filter unit and a tight translucent receptacle, enabling the operator to see the level of liquid inside it. Correct installation of the liquid trap is very important due to the normal sub-atmospheric pressure inside the filter unit.

13.3 EXTENSION FRAME

Extension frame - A•smoke^{40}
The extension frame is designed for raising the filter unit above ground level, for example for using a liquid trap.
Height: 700 mm.



Extension legs - A•smoke^{20}
The extension legs are designed for raising the filter unit above ground level, for example for using the liquid trap receptacle.
Height: 400 mm.



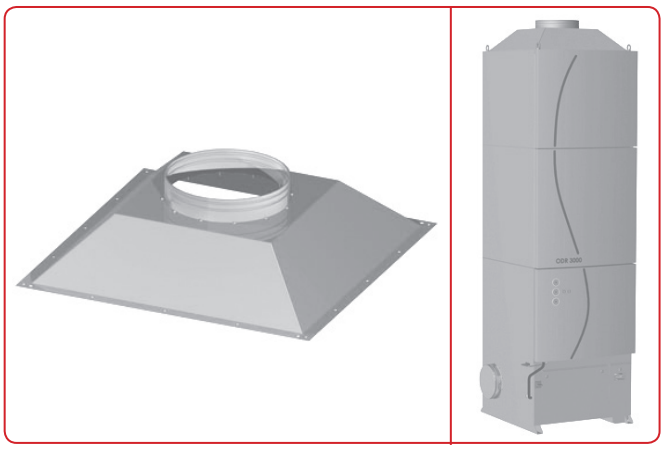
13.4 TRANSITION OUTLET

Transition outlet - A•smoke^{20}

Transition outlet - A•smoke^{40}
The outlet cover is designed for duct connection on the outlet side.

Demount the lifting lugs, glue on the sealing strip, place the cover on top of the filter unit and screw it on with the enclosed threaded bolts. Remount the lifting lugs.

Outlet diameter 400mm.

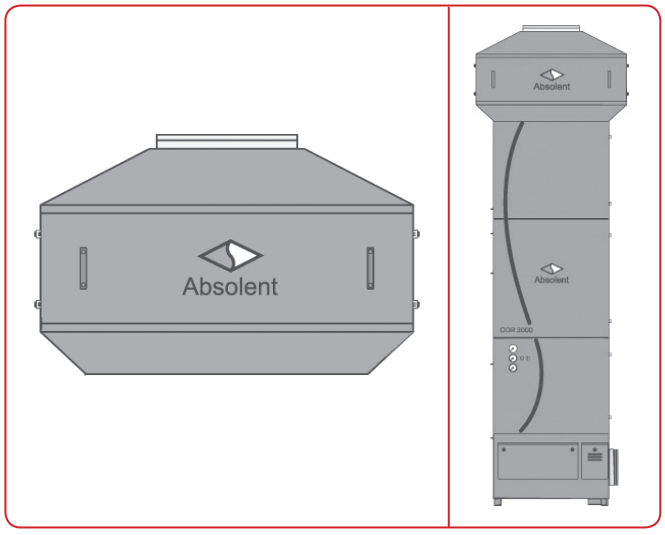


13.5 CARBON FILTER MODULE - A•smoke^{40}

Carbon filter module with 4 carbon cassettes for collection of gases. For mounting, remove the mounting eyes on top of the filter unit, glue the sealing strip onto the top and place the carbon filter box onto the A•smoke unit. Secure with the enclosed bolts.

The standard carbon filter cassettes (type AFK) contain 34 kg of adsorbent (filter media) each, this makes a total of 136 kg.

Absolent can offer coal filter cassetts with other adsorbents that might be more effective for the actual application's specific smell or gas problem. The cassette can be refilled with new adsorbent when the old is used up.



Outlet diameter: 500mm.

Regarding a carbon filter for A•smoke^{20}, please contact Absolent.

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13.6 SPRAY SYSTEM

If the contamination is ”too dry” or contains liquid particles with too high viscosity (gooey), the self-cleaning capacity of the filter degrades and the life cycle decreases drastically. To increase the liquid content and / or decrease the viscosity, little drops of liquid are added to the air through a nozzle.
The added liquid has to be able to dissolve the contamination. For emulsions, use water.
The nozzle is mounted onto the inlet chanel. The spray system is controlled by a time relay with adjustable pause and spray time. For further information about installation, safety and service, see the user’s manual for the spray system.

13.7 FREQUENCY CONVERTER

The A•smoke filter unit can be equipped with a frequency converter and a pressure sensor.
Please contact Absolent / your Absolent representative for more information.

13.8 PREFILTER FOR SEVERE DIRT

For severe dirt, we supply a flat prefilter which is to be mounted under the first filter stage of the A•smoke filter unit.
Please contact Absolent / your Absolent representative for more information.

14 A•smoke^{40} *Heat Treat version*

A•smoke^{40} *Heat Treat version* is the first filter unit in a series of filter units which have been optimized for different applications.

HEPA filter H13 for a guaranteed separation degree of 99,97% (mpps)
Optimized filter cassette for heat treatment: D44 resp M93
Option: Flat prefilter for severe dirt before filter stage 1
Frequency converter with pressure control for demand-adjusted airflow
Option: Spray system in the air inlet
Absolent

Subject to alteration without prior notice.

15 FAULT TRACING

Malfunction	Possible cause	Action
Low capacity (air flow)	The fan rotates in the wrong direction.	Check the fan's direction of rotation (heading 8.3**) - (only skilled personnel).**
	With speed (rpm) regulation: The fan speed (rpm) is set too low.	Check the fan speed (rpm) - **(only skilled personnel).**
	Too high pressure drop over one or more filter cassettes.	Check the pressure drop. If the yellow or red LED lamp is lit for one of the filter stages, the cassette should be replaced.
	High pressure drop in the duct system.	Check and possibly change the duct system
	Adjustable damper is closed or incorrectly adjusted.	Check and possibly adjust the damper on the suction pipe between the machine and filter.
	The ducts are not sealed or dirty.	Check that there is no leakage from the suction pipe between the machine and filter. Check that the ducts don't contain dirt.
Abnormally short replacement interval for the HEPA filter:	An incorrectly positioned or damaged sealing strip can result in leakage past filter stages 1, 2. Resulting in unfiltered air reaching the HEPA filter.	Check that filter stages 1, 2 are fitted with the seal upward. Also check that the sealing strip is undamaged.
	Cassettes that are not secured can result in air leakage past the filter cassettes. Unfiltered air will then reached the HEPA filter.	Check that filter stages 1, 2 are secured against the sealing frame correctly (heading 12).
	The filter cassette in stage 1 and/or 2 are not optimised for the application in question.	Check with Absolent that the correct filter cassette is being used in filter stage 1, 2 for the application in question.
Abnormally short service interval for the prefilter:	The filter cassette in stage 1 and/or 2 are not optimised for the application in question.	Check with Absolent that the correct field cassette is being used in filter stage 1 and/or 2 for the application in question.
	The filter cassettes have become clogged on account of high viscosity in the oil mist, which gives insufficient drainage.	If emulsions are used, filter clogging may be due to the filter running when production has stopped, which dries out the filter cassette (water evaporates). Consequently, switch off the filter unit when not in use. If the fluid in the process has a high viscosity, it is necessary to apply fluid with a spray system (heading 13).
	The filter cassettes have become clogged.	Check that chips have not been drawn down with the air into the filter unit. The problem with chips can be solved by calibrating the air flow or coarse filtering before the filter unit. Also check that sticky particles have not clogged filter stage no. 1 (for example, in foundry applications). Contact Absolent for appropriate measures.

16 ABSOLENT WARRANTIES

Absolent always take full responsibility that the delivered product fulfils the function and life time guaranteed when purchased. This warranty is however only valid if the product is in its original configuration and only when original spare parts have been used when servicing or repairing the filter unit.

Some examples on why orignal parts are so important are shown below:

1. FAN MOTOR
   In order to cope with the special assembly configuration in an Absolent unit the original motor is supplied with special bearings and a bearing locking device.
   Using the ”wrong” type of motor will increase the risk of breakdown or failure.

2. FILTER CASSETTES
   The Absolent oil mist filter depends on the multi-stage filtration technology. In order to reach the optimum filtration efficiency and the longest possible life time, the filter cassettes have been carefully balanced against each other. If one or several of these cassettes are replaced by a different or third-party filter cassette, this balance is destroyed and the consequence is a decreased collecting efficiency and shortened life time for all filter stages.

17 SPARE PARTS

Absolent has a complete range of spare parts, which ensure the operation of installations.

Please supply the filter unit’s serial number and the part number in order to guarantee delivery of the correct spare parts. These can be found on the machine plate, which is located on the right-hand side of the unit. See figure 1.

When ordering filter cassettes, the above details should be supplemented with the filter cassette’s material code. This can be read on the filter cassette’s rating plate by “type”. See figure 2.

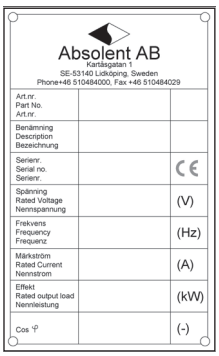

Fig. 1

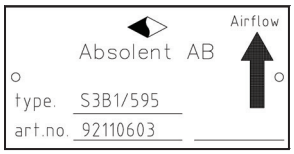

Fig. 2

18 TECHNICAL SUPPORT

Absolent has a complete range of spare parts, which give full service, and ensure the operation of installations. In the event of questions concerning maintenance and spare parts please contact:

Head Office
Absolent AB
Kartåsgatan 1
SE-531 40 Lidköping
Sweden
Tel +46 (0)510 484000
Fax +46 (0)510 484029
E-mail: info@absolent.se
www.absolent.com

Dealer:

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19 EC DECLARATION OF CONFORMITY

Manufacturer:
Absolent AB
Kartåsgatan 1
SE-531 40 Lidköping
Sweden
Phone: +46 (0)510-48 40 00

Authorized to compile technical documentation
Jan Berntsson
Kartåsgatan 1
SE-531 40 Lidköping
Sweden
Phone: +46 (0)510-48 40 00

We, Absolent AB, declare under our sole responsibility that the products:

A•smoke^{20}, A•smoke^{40} och A•smoke^{120}

to which this declaration relates, is in conformity with the following standard(s) or other normative document(s)

Machinery directive	2006/42/EG
Electromagnetic Compatibility (EMC)	2004/108/EG
Low Voltage Directive (LVD)	2006/95/EG

Lidköping , 28th of December 2009

Tony Landh
CEO